

WHAT IS CLAIMED IS:

1. A method of manufacturing a semiconductor device, comprising of:
 - (a) connecting a first substrate with a second substrate disposed to be stacked on the first substrate; and
 - (b) cutting the first substrate and the second substrate in the same process with a cutting tool, wherein:
 - the cutting tool includes a plurality of cutters disposed close to each other, having different cut widths; and
 - the first substrate and the second substrate are cut with the cutting tool so that the first substrate and the second substrate have different cut widths, in step (b).
2. The method of manufacturing a semiconductor device according to claim 1, further comprising:
 - providing at least a part of the first substrate with optical transparency; and
 - forming the second substrate to include a part which becomes an optical chip including an optical unit with the part including at least a plurality of parts.
3. The method of manufacturing a semiconductor device according to claim 1 further comprising inserting the cutting tool into the first substrate and the second substrate from a side of the first substrate.
4. The method of manufacturing a semiconductor device according to claim 3, further comprising:
 - cutting the first substrate with a first cutter and cutting the second substrate with a second cutter; and
 - cutting a cut width of the first substrate by the first cutter larger than cutting a cut width of the second substrate by the second cutter, in step (b).
5. The method of manufacturing a semiconductor device according to claim 4, further comprising providing the length of the first cutter larger than the

thickness of a part which is cut, of the first substrate.

6. The method of manufacturing a semiconductor device according to claim 4, further comprising providing the length of the second cutter is larger than the thickness of a part which is cut, of the second substrate.

7. The method of manufacturing a semiconductor device according to claim 4 further comprising positioning the first cutter with an interval from a surface of the second substrate at the time of cutting the second substrate.

8. The method of manufacturing a semiconductor device according to claim 4, further comprising:

forming an electrode on the part which becomes an optical chip on the second substrate, and outside the optical unit; and

removing a part of the first substrate located above the electrode with the first cutter in step (b).

9. The method of manufacturing a semiconductor device according to claim 8, further comprising:

attaching a sheet to the second substrate before step (b); and

cutting the second substrate not so as to penetrate the sheet with the cutting tool in step (b).

10. The method of manufacturing a semiconductor device according to claim 1, further comprising:

forming a trench along a cut line of the first substrate before step (b); and

cutting the first substrate along the cut line in step (b).

11. The method of manufacturing a semiconductor device according to claim 1, further comprising cutting and separating the first substrate and the second substrate into individual pieces that include a part of the first substrate and a part of the second substrate which are placed face to face and fixed to each other.

12. The method of manufacturing a semiconductor device according to claim 1, further comprising:

placing the first substrate and the second substrate face to face through a spacer; and

fixing the first substrate to the second substrate through the spacer.

13. The method of manufacturing a semiconductor device according to claim 1, further comprising:

bonding the first substrate with the second substrate through an optically transparent adhesive; and

fixing the first substrate to the second substrate through the optically transparent adhesive.

14. The method of manufacturing a semiconductor device according to claim 1, further comprising:

forming a connecting part which connects a plurality of covers to each other in the first substrate;

fixing a plurality of the covers to the second substrate in step (a); and

cutting the connecting part in step (b).

15. A semiconductor device manufactured by the method of manufacturing a semiconductor device according to claim 1.

16. A semiconductor device comprising the semiconductor device according to claim 15 and a supporting member which supports the semiconductor device.

17. A circuit substrate comprising the semiconductor device according to claim 15.

18. Electronic equipment comprising the semiconductor device according to claim 15.

19. A semiconductor device, comprising:

a first substrate with a second substrate disposed to be stacked on the first substrate; and

a cutting tool cutting the first substrate and the second substrate in the same process, wherein:

the cutting tool includes a plurality of cutters disposed close to each other, having different cut widths, and

the first substrate and the second substrate are cut with the cutting tool so that the first substrate and the second substrate have different cut widths.

20. A semiconductor device, comprising:

a first substrate connected with a second substrate disposed to be stacked on the first substrate; and

means for cutting the first substrate and the second substrate in the same process, wherein:

the means for cutting includes a plurality of cutters disposed close to each other, having different cut widths, and

the first substrate and the second substrate are cut with the means for cutting so that the first substrate and the second substrate have different cut widths.